

Application/Control Number: 10/003,518

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CLAIM PTO

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1. A remote viewing apparatus with relative directional indication, comprising:
  - (a) an image capture device;
  - (b) an image display device communicatively associated with said image capture device for receiving and displaying imagery data transmitted from said image capture device; and
  - (c) a relative direction indicator communicatively associated with said image capture device and said image display device for indicating a directional orientation of said image capture device relative to a directional orientation of said image display device.
2. The remote viewing apparatus of claim 1, wherein said relative direction indicator includes means for indicating a viewing direction of said image capture device relative to said directional orientation of said image display device.
3. The remote viewing apparatus of claim 1, wherein said relative direction indicator is constructed and arranged to overlay a graphical representation of said directional orientation of said image capture device within said imagery data being displayed on said image display device.
4. The remote viewing apparatus of claim 1, wherein said relative direction indicator includes means for determining the difference between a viewing direction of said image capture device and said directional orientation of said image display device, and

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indicating said viewing direction of said image capture device on said image display device based on the difference between said viewing direction of said image capture device and said directional orientation of said display device.

5. The remote viewing apparatus of claim 1, wherein said relative direction indicator includes an electronic compass module mounted on each of said image capture and said image display devices.
6. The remote viewing apparatus of claim 5, wherein said relative direction indicator calculates the difference between the magnetic heading of said electronic compass module on said image capture device and the magnetic heading of said electronic compass module on said image display device, and displays a graphical representation on said image display device of a viewing direction of said image capture device relative to said directional orientation of said image display device, based on said calculated relative directional difference therebetween.
7. The remote viewing apparatus of claim 5, wherein each said electronic compass module includes a pair of orthogonally-mounted compass sensors.
8. The remote viewing apparatus of claim 1, wherein said image display device is movable.

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9. The remote viewing apparatus of claim 1, wherein said relative direction indicator provides a visible indication of a viewing direction of said image capture device relative to said directional orientation of said image display device.
10. The remote viewing apparatus of claim 1, including means for displaying on said image display device operational information relative to said image capture device other than said directional orientation thereof.
11. A remote viewing apparatus with relative directional indication, comprising:
  - (a) an image capture device;
  - (b) an image display device communicatively associated with said image capture device for receiving and displaying imagery data transmitted from said image capture device; and
  - (c) a relative direction indicator communicatively associated with said image capture device for indicating a viewing direction of said image capture device relative to a known movable directional orientation.
12. The remote viewing apparatus of claim 11, wherein said image display device is movable, and an established directional orientation of said image display device constitutes said known movable directional orientation from which said relative viewing direction of said image capture device is determined.

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13. The remote viewing apparatus of claim 11, wherein an established directional orientation of said image display device determines said known movable directional orientation from which said relative viewing direction of said image capture device is determined.
14. The remote viewing apparatus of claim 13, wherein said relative direction indicator is constructed and arranged to display on said image display device an indicator of said viewing direction of said image capture device relative to said established directional orientation of said image display device.
15. The remote viewing apparatus of claim 14, wherein said viewing direction indicator displayed by said relative direction indicator on said image display device is composed of a peripherally disposed graphical arrow that is rotatable about the perimeter of said image display device in relation to the relative directional difference between said viewing direction of said image capture device and said established directional orientation of said image display device.
16. The remote viewing apparatus of claim 11, wherein said relative direction indicator provides a visible indication of said viewing direction of said image capture device relative to said known movable directional orientation.
17. The remote viewing apparatus of claim 11, wherein said relative direction indicator is comprised of a pair of electronic compass modules, one said compass module being

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carried by said image capture device, and the other said compass module being carried by said image display device.

18. The remote viewing apparatus of claim 17, wherein said relative direction indicator is constructed and arranged to calculate the difference between the magnetic directional orientation of one compass module relative to the other, for use in determining said viewing direction of said image capture device relative to an established directional orientation of said image display device.
19. The remote viewing apparatus of claim 11, including means associated with said image capture device for providing indication of operational information relative to said image capture device.
20. A remote viewing apparatus with relative directional indication, comprising:
  - (a) an image capture device having a first compass connected thereto;
  - (b) an image display device communicatively associated with said image capture device and having a second compass connected thereto; and
  - (c) a relative direction indicator communicatively associated with said first and second compasses, said relative direction indicator including means for determining and indicating the relative directional difference between the respective headings of said first and second compasses.

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21. The remote viewing apparatus of claim 20, wherein said first and second compasses are comprised of electronic compass modules, each of which includes a pair of orthogonally disposed compass sensors.
22. The remote viewing apparatus of claim 20, wherein said relative direction indicator is constructed to indicate a viewing direction of said image capture device relative to a known directional orientation of said image display device, based on the relative directional difference between said first and second compasses.
- 23.(New) The remote viewing apparatus of claim 20, including a temperature sensor and a pressure sensor carried by said image capture device for determining and displaying the temperature and depth of said image capture device on said image display device.
- 24.(New) The remote viewing apparatus of claim 10, wherein the temperature at said image capture device is displayed on said image display device.
- 25.(New) The remote viewing apparatus of claim 10, wherein the depth of said image capture device is displayed on said image display device.

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26.(New) The remote viewing apparatus of claim 1, including a pressure sensor carried by said image capture device for determining depth of said image capture device.

27.(New) The remote viewing apparatus of claim 19, including a water pressure sensor located at said image capture device for determining the depth of said image capture device under water and displaying the depth on said image display device.

28.(New) The remote viewing apparatus of claim 11, wherein said image capture device includes a pressure sensor.

29.(New) The remote viewing apparatus of claim 11, wherein said image display device includes means for displaying global positioning location data.